[0024] FIG. **6** illustrates a flowchart illustrating an exemplary method of presenting simulated reels on a processor-based gaming machine according to one embodiment of the present invention.

DETAILED DESCRIPTION

[0025] Exemplary applications of apparatuses and methods according to the present invention are described as follows. These examples are being provided solely to add context and aid in the understanding of the invention. It will be apparent to one skilled in the art that the present invention may be practiced without some or all of these specific details. In other instances, well known process steps have not been described in detail in order to avoid unnecessarily obscuring the present invention. Other applications are possible, such that the following examples should not be taken as definitive or limiting in scope or setting. Although these examples are described in sufficient detail to enable one skilled in the art to practice the invention, it will be understood that they are not limiting, such that other embodiments may be used and changes may be made without departing from the spirit and scope of the invention.

[0026] Described herein are various processor-based gaming machines and systems that realistically emulate physical rotating reels, such as those from a mechanical or electromechanical reel based slot machine. It will be understood that when the term actual "physical" reels or the like is used herein without particularized context, that such a term can refer to purely mechanical reels, electromechanical stepper based reels, or both. The disclosed processor-based gaming machines can include a number of realistic adaptations, such as audio, video and/or physical adaptations, where each contributes to the perception of actual physical reels from a reel slot machine. Such gaming machines and systems can include a specialized multi-layer display, a specialized reel spin timer, a specialized reel sound generator, and/or one or more specialized speakers adapted to present emulated physical reel sounds, which sounds may be presented in stereo for added effect. Such components may be implemented and used individually or in various combinations, as desired.

Gaming Machines

[0027] Referring first to FIG. **1**, an exemplary processor-based gaming machine is illustrated in perspective view. Gaming machine **10** includes a top box **11** and a main cabinet **12**, which generally surrounds the machine interior (not shown) and is viewable by users. This top box and/or main cabinet can together or separately form an exterior housing adapted to contain a plurality of internal gaming machine components therein. Main cabinet **12** includes a main door **20** on the front of the gaming machine, which preferably opens to provide access to the gaming machine interior. Attached to the main door are typically one or more player-input switches or buttons **21**, which collectively form a button panel, one or more money or credit acceptors, such as a coin acceptor **22** and a bill or ticket validator **23**, a coin tray **24**, and a belly glass **25**. Viewable through main door **20** is a primary video display monitor **26** adapted to present a game and one or more information panels **27**. The primary video display monitor **26** will typically be a cathode ray tube, high resolution flat-panel LCD, plasma/LED display or other conventional or other type of appropriate video monitor. Alternatively, a plurality of gaming reels can be used as a primary gaming machine display in place of display monitor **26**, with such gaming reels preferably being electronically controlled, as will be readily appreciated by one skilled in the art.

[0028] Top box **11**, which typically rests atop of the main cabinet **12**, may contain a ticket dispenser **28**, a key pad **29**, one or more additional displays **30**, a card reader **31**, one or more speakers **32**, a top glass **33**, one or more cameras **34**, and a secondary video display monitor **35**, which can similarly be a cathode ray tube, a high resolution flat-panel LCD, a plasma/LED display or any other conventional or other type of appropriate video monitor. Alternatively, secondary display monitor **35** might also be foregone in place of other displays, such as gaming reels or physical dioramas that might include other moving components, such as, for example, one or more movable dice, a spinning wheel or a rotating display. It will be understood that many makes, models, types and varieties of gaming machines exist, that not every such gaming machine will include all or any of the foregoing items, and that many gaming machines will include other items not described above. In particular, gaming machine **10** can be any of a wide variety of gaming machines manufactured and/or distributed by International Game Technology of Reno, Nev. ("IGT").

[0029] With respect to the basic gaming functionalities provided, it will be readily understood that gaming machine **10** can be adapted for presenting and playing any of a number of gaming events, particularly games of chance involving a player wager and potential monetary payout, such as, for example, a wager on a sporting event or general play as a slot machine game, a keno game, a video poker game, a video blackjack game, and/or any other video table game, among others. Other features and functions may also be used in association with gaming machine **10**, and it is specifically contemplated that the present invention can be used in conjunction with such a gaming machine or device that might encompass any or all such additional types of features and functions. In various preferred embodiments, gaming machine **10** can be adapted to present a video simulation of a reel based slots game involving a plurality of gaming reels.

[0030] With respect to electronic gaming machines in particular, the electronic gaming machines made by IGT are provided with special features and additional circuitry that differentiate them from general-purpose computers, such as a laptop or desktop personal computer ("PC"). Because gaming machines are highly regulated to ensure fairness, and in many cases are operable to dispense monetary awards of millions of dollars, hardware and software architectures that differ significantly from those of general-purpose computers may be implemented into a typical electronic gaming machine in order to satisfy security concerns and the many strict regulatory requirements that apply to a gaming environment. A general description of many such specializations in electronic gaming machines relative to general-purpose computing machines and specific examples of the additional or different components and features found in such electronic gaming machines will now be provided.

[0031] At first glance, one might think that adapting PC technologies to the gaming industry would be a simple proposition, since both PCs and gaming machines employ microprocessors that control a variety of devices. However, because of such reasons as 1) the regulatory requirements that are placed upon gaming machines, 2) the harsh environment in which gaming machines operate, 3) security requirements and 4) fault tolerance requirements, adapting PC technolo-